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PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCT002		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/KR 00/00457	International filing date (day month year) 13 May 2000 (13.05.2000)	Priority Date (day month year) 30 June 1999 (30.06.1999)	
International Patent Classification (IPC) or national classification and IPC IPC⁷: H02G 3/04, H02G 9/06, G02B 6/44, F16L 11/11			
Applicant BYUN, Moo-Won			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examination Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p> <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I. <input checked="" type="checkbox"/> Basis of the opinion II. <input type="checkbox"/> Priority III. <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV. <input type="checkbox"/> Lack of unity of invention V. <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement VI. <input type="checkbox"/> Certain documents cited VII. <input type="checkbox"/> Certain defects in the international application VIII. <input type="checkbox"/> Certain observations on the international application 			
Date of submission of the demand 30 January 2001 (30.01.2001)		Date of completion of this report 23 October 2001 (23.10.2001)	
Name and mailing address of the IPEA/AT Austrian Patent Office Kohlmarkt 8-10 A-1014 Vienna Facsimile No. 1/53424/200		Authorized officer KOSKARTI Telephone No. 1/53424/326	

I. Basis of the report1. With regard to the **elements** of the international application:*☒ the international application as originally filed☐ the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the claims:

pages _____, as originally filed

pages _____, as amended (together with any statement) under Article 19

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the drawings:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☐ The amendments have resulted in the cancellation of:☐ the description, pages _____.☐ the claims, Nos. _____.☐ the drawings, sheets/fig _____.5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/JP 00/00457

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement

1. Statement	Novelty (N)	Claims 1-20	YES
		Claims	NO
	Inventive step (IS)	Claims 1-20	YES
		Claims	NO
	Industrial applicability (IA)	Claims 1-20	YES
		Claims	NO

Citations and explanations (Rule 70.7)

The following documents have been cited in the Search Report:

D1: US5692545A
D2: EP0893722A1
D3: GB1458531A

Document D1 discloses a cable duct for communication cables including fibre optic cables and electric cables. The cable duct consists of a body with circular cross-section. Inside the body are 2 or more pipe like cavities which axes are parallel to the axis of the body. The outer surface of the body is corrugated including a number of ridges where each of the ridges encircles the body in a plane perpendicular to the longitudinal axis. The document neither discloses a plurality of plastics inner ducts in contact with each nor an outer duct surrounding the plurality of inner ducts. Therefore claims 1 to 20 are new and inventive in respect of document D1.

Document D2 discloses a combination optical fiber cable comprising a central tube containing at least one optical fibre and two or more tubes each also containing at least one optical fibre. The tubes are enclosed in an outer sheath. At least two structural strength members of high tensile material are provided between the central tube and the sheath. Two longitudinal strength members are embedded in the sheath and water blocking material is provided in the tubes and the open spaces between the tubes. A layer of corrugated steel armour is provided between the tubes and the sheath. The document doesn't disclose a plastics outer duct comprising a corrugated outer surface including a number of ridges where each of the ridges encircles the body in a plane perpendicular to the longitudinal axis. The strength of the optical fibre cable is determined by the corrugated steel armour layer and not by the corrugated outer plastics duct disclosed by the application. Therefore claims 1 to 20 are new and inventive in respect of document D2.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: **Box V** (page 1)

Document D3 discloses an electric cable plastics channeling which is rollable into a continuous coil to allow cutting of exact lengths without wastage. The channel has transverse corrugations forming an U-profile. The document doesn't disclose one or more ducts with closed cross-section. Therefore claims 1 to 20 are new and inventive in respect of document D3.

All claims 1 to 20 are new and inventive in respect of D1, D2 and D3.

Industrial applicability is given.

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
4 January 2001 (04.01.2001)

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(10) International Publication Number
WO 01/01535 A1(51) International Patent Classification⁷: **H02G 3/04**,
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(21) International Application Number: PCT/KR00/00457

(22) International Filing Date: 13 May 2000 (13.05.2000)

(25) Filing Language: English

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1999/26147 ✓ 30 June 1999 (30.06.1999) KR
1999/47976 ✓ 1 November 1999 (01.11.1999) KR

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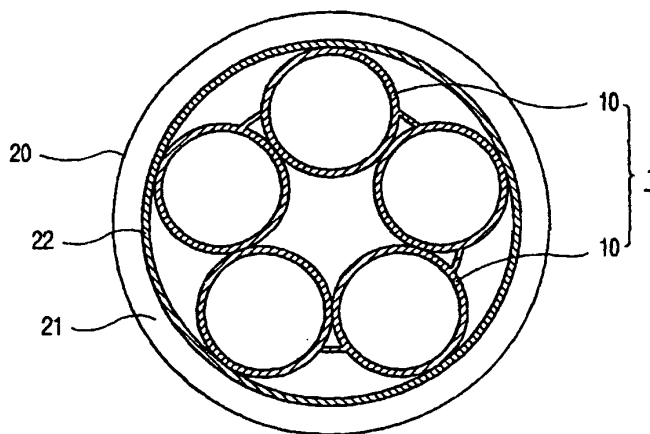
(72) Inventor: BYUN, Moo-Won [KR/KR]; 102-1306
Hyundai Apt., 39/7, 413-1 Poongnap-dong, Songpa-gu,
Seoul 138-040 (KR).(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE,
DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ,
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent
(AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent
(AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,
MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— With international search report.

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(KR).For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: MULTIPLE CHANNEL DUCT ASSEMBLY FOR CABLES



(57) Abstract: The multiple channel duct assembly for cables comprises of a plurality of plastic inner ducts (10) contiguous, co-directionally extending, substantially parallel, in abutting contact with each other, each of said inner ducts (10) having the cross sectional areas sufficient to contain at least one cable; and a plastic outer duct (20) encircling said inner ducts over their entire length to retain them in their contiguous relationship; wherein said outer duct (20) has a corrugated tubular section including a plurality of contiguous ridges (21) and troughs (22) extending over the entire length; whereby said assembly is so flexible that it can be coiled around transportable reels (30) as well as so strong that it can withstand dirt in a trench. The aspect of inner ducts (10) of plastic with less friction provides sufficiently smooth inside surfaces to the inner ducts (10), through which fiber optic cables, electric wires or the likes are inserted.

WO 01/01535 A1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 00/00457

CLASSIFICATION OF SUBJECT MATTER

IPC⁷: H02G 3/04, H02G 9/06, G02B 6/44, F16L 11/11

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: H02G G02B F16L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPOQUE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5692545A (RODRIGUE WAYNE) 2 December 1997 (02.12.97) totality, cited in the application.	1-20
A	EP 0893722 A (PIRELLI) 27 January 1999 (27.01.99) abstract, fig. 1.	1,10
A	GB 1458531 A (OCTOPUS ELEC) 14 December 1976 (14.12.76) abstract.	1,10

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&“ document member of the same patent family

Date of the actual completion of the international search

7 August 2000 (07.08.2000)

Date of mailing of the international search report

9 October 2000 (09.10.2000)

Name and mailing address of the ISA/AT

Austrian Patent Office
Kohlmarkt 8-10; A-1014 Vienna

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Authorized officer

Schmidt

Telephone No. 1/53424/336

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/KR 00/00457

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
EP	A1	893722	27-01-1999	AU	A1	76289/98	28-01-1999
				JP	A2	11095076	09-04-1999
				NZ	A	330969	29-04-1999
				US	A	5905834	18-05-1999
GB	A	1458531	15-12-1976	none			
GB	A	1458531	15-12-1976				
US	A	5692545	02-12-1997	none			